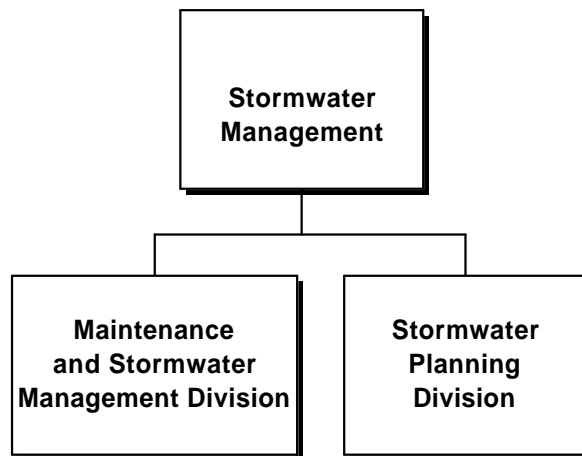


**DEPARTMENT OF PUBLIC WORKS  
AND ENVIRONMENTAL SERVICES  
STORMWATER MANAGEMENT**



# STORMWATER MANAGEMENT

## Agency Position Summary

120 Regular Positions (-3) / 120.0 Regular Staff Years (-3.0)

### Position Detail Information

#### MAINTENANCE AND STORMWATER MANAGEMENT DIVISION

##### ADMINISTRATION

1 Director  
2 Engineers IV  
1 Safety Analyst  
1 Management Analyst II  
1 Network/Telecom Analyst I  
1 Administrative Assistant IV  
4 Administrative Assistants II  
11 Positions  
11.0 Staff Years

##### CONTRACTING SERVICES

1 Engineer II  
1 Engineering Technician III  
1 Engineering Technician II  
3 Positions  
3.0 Staff Years

##### MAINTENANCE AND SERVICES

##### Field Operations

1 Facilities Support Supervisor  
4 Senior Maintenance Supervisors  
1 GIS Analyst I  
9 Labor Crew Chiefs  
6 Laborers III  
9 Utility Workers  
8 Heavy Equipment Operators  
8 Motor Equipment Operators  
11 Truck Drivers  
4 Masons I  
61 Positions  
61.0 Staff Years

##### Maintenance Inspections

1 Engineer II  
1 Engineering Technician III  
1 Senior Maintenance Supervisor  
3 Engineering Technicians I  
6 Positions  
6.0 Staff Years

##### Engineering/Technical Support

1 Engineer III  
2 Engineers II  
2 Engineering Technicians III  
1 Engineering Technician II  
6 Positions  
6.0 Staff Years

##### Equipment/Specialty Trades

1 Vehicle Maintenance Coordinator  
1 Heavy Equipment Operator  
1 Motor Equipment Operator  
1 Carpenter I  
1 Equipment Repairer  
1 Welder II  
6 Positions  
6.0 Staff Years

##### SIGN SERVICES AND MATERIAL SUPPORT

1 Sign Shop Supervisor  
1 Warehouse Supervisor  
1 Warehouse Specialist  
1 Engineering Aide (-1)  
1 Motor Equipment Operator  
0 Truck Driver (-1)  
5 Positions (-2)  
5.0 Staff Years (-2.0)

##### STORMWATER PLANNING DIVISION

1 Director  
1 Engineer IV (-1)  
4 Engineers III  
10 Engineers II  
1 Landscape Architect III  
1 Engineering Technician III  
1 Engineering Technician I  
1 Environmental Technologist III  
1 Environmental Technologist II  
1 Administrative Assistant II  
22 Positions (-1)  
22.0 Staff Years (-1.0)

( - ) Denotes Abolished Position

# STORMWATER MANAGEMENT

## Agency Mission

To develop and maintain a comprehensive watershed and infrastructure management program to protect property, health, and safety, to enhance the quality of life, and to preserve and improve the environment for the benefit of the public. To plan, design, construct, operate, maintain and inspect the infrastructure, and perform environmental assessments through coordinated stormwater and maintenance programs in compliance with all government regulations utilizing innovative techniques, customer feedback, and program review. To be responsive and sensitive to the needs of the residents, customers, and public partners.

Agency Summary					
Category	FY 2002 Actual	FY 2003 Adopted Budget Plan	FY 2003 Revised Budget Plan	FY 2004 Advertised Budget Plan	FY 2004 Adopted Budget Plan
Authorized Positions/Staff Years					
Regular	125/ 125	123/ 123	123/ 123	120/ 120	120/ 120
Expenditures:					
Personnel Services	\$5,199,745	\$6,007,822	\$5,857,822	\$6,185,362	\$6,139,968
Operating Expenses	2,466,965	2,749,669	3,134,857	2,442,407	2,426,915
Capital Equipment	479,306	241,397	354,262	51,000	51,000
<b>Subtotal</b>	<b>\$8,146,016</b>	<b>\$8,998,888</b>	<b>\$9,346,941</b>	<b>\$8,678,769</b>	<b>\$8,617,883</b>
Less:					
Recovered Costs	(\$722,323)	(\$708,595)	(\$708,595)	(\$744,430)	(\$744,430)
<b>Total Expenditures</b>	<b>\$7,423,693</b>	<b>\$8,290,293</b>	<b>\$8,638,346</b>	<b>\$7,934,339</b>	<b>\$7,873,453</b>
Income:					
Street Sign Fabrication Fees	\$6,055	\$5,170	\$5,170	\$4,648	\$4,648
Miscellaneous Revenue	22,561	14,027	16,000	16,000	16,000
<b>Total Income</b>	<b>\$28,616</b>	<b>\$19,197</b>	<b>\$21,170</b>	<b>\$20,648</b>	<b>\$20,648</b>
<b>Net Cost to the County</b>	<b>\$7,395,077</b>	<b>\$8,271,096</b>	<b>\$8,617,176</b>	<b>\$7,913,691</b>	<b>\$7,852,805</b>

Cost Center Summary					
Category	FY 2002 Actual	FY 2003 Adopted Budget Plan	FY 2003 Revised Budget Plan	FY 2004 Advertised Budget Plan	FY 2004 Adopted Budget Plan
Stormwater Management Division	\$6,592,503	\$7,214,135	\$7,617,420	\$6,800,890	\$6,756,805
Stormwater Planning Division	831,190	1,076,158	1,020,926	1,133,449	1,116,648
<b>Total Expenditures</b>	<b>\$7,423,693</b>	<b>\$8,290,293</b>	<b>\$8,638,346</b>	<b>\$7,934,339</b>	<b>\$7,873,453</b>

## Board of Supervisors' Adjustments

*The following funding adjustments reflect all changes to the FY 2004 Advertised Budget Plan, as approved by the Board of Supervisors on April 28, 2003:*

- ♦ A decrease of \$45,394 reflects reduced funding for the Pay for Performance program. Based on the approved 25 percent reduction, the FY 2004 program will result in reductions in the increases employees will receive based on their performance rating, capping employees to a maximum of 5.25 percent. This adjustment leaves in place the Pay for Performance program in preparation for system redesign for FY 2005.

# STORMWATER MANAGEMENT

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- ◆ A decrease of \$12,100 for PC Replacement charges based on the reduction in the annual contribution for PC replacement by \$100 per PC, from \$500 to \$400.
- ◆ A decrease of \$3,392 for Department of Vehicle Services charges based on anticipated charges for maintenance costs.

***The following funding adjustments reflect all approved changes to the FY 2003 Revised Budget Plan from January 1, 2003 through April 21, 2003. Included are all adjustments made as part of the FY 2003 Third Quarter Review:***

- ◆ Funding of \$150,000 is reallocated from Personnel Services to Operating Expenses due to higher than anticipated costs for snow removal.

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## ***County Executive Proposed FY 2004 Advertised Budget Plan***

### **Purpose**

The Stormwater Management (SWM) business area consists of the Maintenance and Stormwater Management Division and the Stormwater Planning Division. These two agencies develop, promote, and implement strategies that protect the County's stormwater infrastructure and preserve and improve the natural ecosystem. This business area was established in conjunction with a Department of Public Works and Environmental Services reorganization in FY 2000 in order to place new emphasis on environmental stewardship within the stormwater management areas. This reorganization consolidated key functions such as development and implementation of master plan efforts, inventory identification and assessment, stormwater regulation, capital construction, and performance of critical maintenance activities.

The Maintenance and Stormwater Management Division provides for in-house and contracted maintenance services for the County's vast inventory of stormwater facilities, walkways, roadways, commercial revitalization, park and ride and commuter rail facilities, public street name signs, and other related infrastructure. Additionally, this division provides snow removal and other emergency support services for designated facilities and agencies countywide.

The Stormwater Planning Division provides stormwater planning, monitoring, and capital project design services. This division maintains the County's federally mandated stormwater discharge permit, National Pollutant Discharge Elimination System (NPDES) permit. This division also coordinates State mandated dam operation and maintenance certificates, watershed management efforts, public education and awareness initiatives, stream monitoring and assessments, and implementation of the County's master drainage plan. Engineering design and contract administration services for storm drainage improvement projects are also provided.

### **Key Accomplishments**

- ◆ Initiated Watershed Management Planning efforts for the entire County. Watershed plans are to be developed over 5-7 year timeframe. The initial 10 watersheds and the consultants were selected, the scope of work was defined, and a public kickoff meeting was conducted in October 2001 for the watershed project. The first phase of this effort consists of a countywide physical stream assessment for which the field work will commence in October 2002.
- ◆ Successfully negotiated with the Virginia Department of Environmental Quality the renewal of the NPDES permit for the next 5 years, effective February 2002. New requirements involve increased public education and outreach, watershed monitoring, and increased emphasis on industrial and high-risk pollution areas.
- ◆ Developed County web pages on watersheds to support the need to provide continual information and public outreach relating to Watershed Management Planning.

# STORMWATER MANAGEMENT

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- ◆ Initiated a special task force to evaluate the current Regional Stormwater Management Pond program and to make recommendations for possible changes to future implementation and current policy.
- ◆ Developed a protocol for identifying perennial streams and conducted a pilot project to test the protocols. Commenced a 3-year project to field identify additional perennial streams countywide. The new stream data will be used to update GIS maps of the stream network and update the County's Chesapeake Bay Preservation Ordinance and Resource Protection Areas to support new state regulations.
- ◆ Provided support to the State in completion of Total Maximum Daily Loads (TMDLs) for Accotink Creek and Four Mile Run impaired stream segments. The U.S. Environmental Protection Agency approved these TMDLs in June 2002. The implementation phase of the Accotink Creek TMDL commenced in December 2001 with the USGS conducting a 3-year study to identify the sources of human fecal coliform in stormwater flow into Accotink Creek.
- ◆ Continued annual biological assessment to determine trends in stream water quality for 20 percent to 25 percent of the County under the Stream Protection Strategy (SPS) program. This is a follow up to the SPS Baseline Study effort, which was complete in January 2001.
- ◆ Designed and provided contract assistance/oversight for the maintenance rehabilitation of 43 sidewalks, trails, roadways, storm drainage and stormwater management facilities. The total contracted amount was \$1.024 million. The work performed included safety repairs that required immediate attention, exceeded the capacity of the existing in-house maintenance workforce, and could not be deferred.
- ◆ Designed and constructed shallow wetlands marshes in 12 community stormwater management facilities to improve water quality and provide enhanced wildlife habitat.
- ◆ Initiated a new process to implement smaller house flooding repair projects arising from backups of the County's storm drain network. Under this process, the need to establish a capital project was eliminated and project delivery time was reduced by an average of 75 percent with a corresponding reduction in total project cost. Three projects were completed using this process, with a total project cost of \$15,515.

## FY 2004 Initiatives

- ◆ Continue the development of Watershed Management Plans and appropriate models for estimating pollutant loadings to the County's receiving waters. Continue the retrofit evaluation and implementation program of stormwater management facilities as targets of opportunity arise.
- ◆ Enhance public education, outreach, and public involvement through efforts on an individual watershed scale and with the development of a countywide communication plan.
- ◆ Develop a strategic plan to address long-term needs for the Stormwater business area.
- ◆ Increase the accuracy and inventory mapping of the storm sewer system to comply with the 5-year NPDES permit. This enhanced accuracy will be required in FY 2004 for hazardous material response, maintenance work order generation, and water quality monitoring.
- ◆ Partner with other agencies and larger community associations Countywide to install several stream bioremediation enhancements. County maintenance forces will be supplemented with outside labor and design support through these partnerships.

# STORMWATER MANAGEMENT

## FY 2004 Budget Reductions

As part of the FY 2004 Advertised Budget Plan, reductions totaling \$497,661 and 3/3.0 SYE positions are proposed by the County Executive for this agency. These reductions include:

- ◆ Reduction of \$110,000 and 2/2.0 SYE positions in the Sign Services and Material Support Division. The agency will no longer inspect existing signs to identify those in need of repair or replacement. By relying on reports of citizens regarding damaged signs, it is estimated that problems with 3,100 of the County's 34,600 signs will not be corrected in the first year and that the number of signs in need of repair will compound in subsequent years.
- ◆ Reduction of \$82,609 and 1/1.0 SYE position in the Floodplains and Special Projects Branch. The elimination of this position will cause delays in the design of house flooding and related Capital projects. Delays in floodplain analysis will occur as well. It is anticipated that delays would be at least a week for each project and that the delays would compound over time.
- ◆ Reduction of \$140,052 in the Commuter Rail and Park-and-Ride Maintenance Program will result in deferral or elimination of non-routine repairs such as pavement failures, sidewalk repairs, curb and gutter repairs, and parking lot re-striping. Structural deficiencies will only be repaired to eliminate safety hazards. Preventive maintenance such as the removal of dead trees and plants will also be deferred or eliminated.
- ◆ Reduction of \$60,000 in the Storm Drainage Pipe and Channel Replacement Program will result in delays in the repair of major failed storm drainage systems. The contracting of major repairs will be performed on an emergency basis only. Preventive maintenance to the infrastructure will be deferred and could lead to more costly repairs at a later date. Degradation of the infrastructure could occur due to failure to repair or replace damaged sections of the system.
- ◆ Reduction of \$50,000 in the Stormwater Detention Pond Mowing and Channel Cleaning Program will change the level of service from annual service and inspections of these facilities to a 15 month cycle. It is anticipated that citizen complaints, especially regarding standing water concerns, will increase. Longer periods between channel cleanings may result in greater silt deposits, increasing future removal costs.
- ◆ Reduction of \$35,000 in the County Road Maintenance and Improvement Program will result in the deferral or elimination of non-routine repairs such as pavement failures and contracted paving for County roads. Repairs for pavement failures and pothole repairs will be prioritized and repaired based on safety concerns.
- ◆ Reduction of \$20,000 will result in the elimination of all contracted supplemental snow removal operations for non-essential County facilities. The elimination of these services will result in delayed openings of facilities including County libraries and community centers.

## Performance Measurement Results

During FY 2002, 132 miles of storm drainage system (18 percent), 1,315 stormwater management facilities (130 percent) and 250 miles of walkway (47 percent) were inspected. With the exception of the storm drainage inspections, all objectives pertaining to these inspections were met and or exceeded. Storm drainage inspections did not meet the FY 2002 estimated objective due to position vacancy in the storm drainage program. Through the inspections, the agency continues to identify in advance maintenance areas that meet rehabilitation and or replacement criteria. Additionally in FY 2002, 18 improvement designs were completed, and 108 stormwater management outfalls were inspected and sampled. 262 (100 percent) waiver requests and rezoning applications submitted were processed.

# STORMWATER MANAGEMENT

Citizen maintenance requests per 100 miles of storm drainage systems were reduced by 12 percent in FY 2002. Additionally, citizen maintenance requests per 100 miles of walkways were reduced by 27 percent and citizen maintenance requests per 100 stormwater management facilities were reduced by 17 percent in FY 2002. The reductions in citizen maintenance requests in all program areas are attributable to active program inventory inspections that identify needs in advance of system failures, and public awareness.

## Funding Adjustments

*The following funding adjustments from the FY 2003 Revised Budget Plan are necessary to support the FY 2004 program:*

- ◆ A net increase of \$177,540 in Personnel Services including an increase of \$340,149 associated with salary adjustments necessary to support the County's compensation program, partially offset by a reduction of \$162,609 and the elimination of 3/3.0 SYE positions.
- ◆ A net decrease of \$537,724 in Operating Expenses including \$335,052 in reductions in inspection, repair, and maintenance efforts as recommended by the County Executive, a decrease of \$230,462 primarily due to a one-time increase in FY 2003 for costs associated with the *FY 2002 Carryover Review*, partially offset by an increase of \$27,790 for Information Technology, PC replacement, and Department of Vehicle Services charges.
- ◆ An increase of \$35,835 in Recovered Costs primarily reflecting actual services provided to other agencies.
- ◆ Funding of \$51,000 is recommended for Capital Equipment for replacement equipment that is worn and beyond its useful life. This equipment includes a tractor with a mowing attachment, \$23,600, and a street sweeper, \$27,400.

*The following funding adjustments reflect all approved changes to the FY 2003 Revised Budget Plan since passage of the FY 2003 Adopted Budget Plan. Included are all adjustments made as part of the FY 2002 Carryover Review and all other approved changes through December 31, 2002:*

- ◆ Encumbered carryover of \$348,053 including \$230,462 in Operating Expenses and \$117,591 in Capital Equipment.



## Maintenance and Stormwater Management Division

Cost Center Summary					
Category	FY 2002 Actual	FY 2003 Adopted Budget Plan	FY 2003 Revised Budget Plan	FY 2004 Advertised Budget Plan	FY 2004 Adopted Budget Plan
Authorized Positions/Staff Years					
Regular	101/ 101	100/ 100	100/ 100	98/ 98	98/ 98
<b>Total Expenditure</b>	<b>\$6,592,503</b>	<b>\$7,214,135</b>	<b>\$7,617,420</b>	<b>\$6,800,890</b>	<b>\$6,756,805</b>

## Goal

To maintain the County's storm drainage systems, stormwater management facilities, walkways/trails, commuter rail and park-and-ride facilities, and public street name signs, in addition to providing snow removal for essential County facilities, responding to health and safety directives, and providing support for other public safety emergencies as requested.

# STORMWATER MANAGEMENT



## Stormwater Planning Division

Cost Center Summary					
Category	FY 2002 Actual	FY 2003 Adopted Budget Plan	FY 2003 Revised Budget Plan	FY 2004 Advertised Budget Plan	FY 2004 Adopted Budget Plan
Authorized Positions/Staff Years					
Regular	24/ 24	23/ 23	23/ 23	22/ 22	22/ 22
<b>Total Expenditure</b>	<b>\$831,190</b>	<b>\$1,076,158</b>	<b>\$1,020,926</b>	<b>\$1,133,449</b>	<b>\$1,116,648</b>

### Goal

To develop and implement the planning and design of stormwater systems to promote, preserve, and improve the natural ecosystems in order to enhance the quality of life within the community.

### Performance Measures

#### Objectives

- ◆ To inspect at least 20 percent of the County's storm drainage system and 100 percent of the stormwater management facilities in order to mitigate flooding and protect property by identifying and correcting deficiencies otherwise reported by citizens, while maintaining the number of maintenance requests at 70 per 100 miles of storm drainage system and 9 maintenance requests per 100 stormwater management facilities.
- ◆ To inspect and maintain at least 40 percent of the County's walkways and trails in order to ensure safe usage by the general public by identifying and correcting deficiencies otherwise reported by citizens.
- ◆ To inspect 100% of all the Agency maintained Commuter Rail and Park-and-Ride facilities monthly in order to insure safe usage, and maintain the annual number of citizen maintenance requests at 36.
- ◆ To increase the completion of improvement designs on schedule and within budget by 10 percentage points, from 50 percent to 60 percent, toward a future target of 65 percent.
- ◆ To inspect and sample at least 200 stormwater outfalls annually in order to prepare an annual report that has no major comments and is required for the Municipal Separate Storm Sewer System Permit (MS4) issued by Virginia Department of Environmental Quality (DEQ).
- ◆ To review and process at least 75 percent of waiver requests and rezoning applications within established deadlines in order to implement the Stormwater Control Plan.



# STORMWATER MANAGEMENT

Indicator	Prior Year Actuals			Current Estimate	Future Estimate
	FY 2000 Actual	FY 2001 Actual	FY 2002 Estimate/Actual	FY 2003	FY 2004
<b>Output:</b>					
Storm drainage system inventory (miles)	756	805	850 / 816	828	840
Stormwater management facilities inventory	941	980	980 / 1,036	1,085	1,137
Storm drainage system inspections (miles)	87	200	170 / 132	166	168
Stormwater management facilities inspections	941	1,365	979 / 1,315	1,085	1,135
Walkways/trails inventory (miles)	408	528	538 / 543	554	565
Walkways/trails inspections (miles)	416	211	215 / 250	222	226
Improvement designs completed	12	15	18 / 18	18	18
SWM outfalls inspected and sampled	141	105	120 / 108	120	200
Waiver requests and rezoning applications processed	288	280	280 / 262	280	280
Commuter Rail and Park-and-Ride Facility Inventory (1)	NA	NA	NA / 10.6	10.0	10.0
Commuter Rail and Park-and-Ride Facility Inspections	NA	NA	NA / 12	12	12
<b>Efficiency:</b>					
Maintenance cost per storm drainage system	\$1,993	\$1,893	\$1,608 / \$1,611	\$1,691	\$1,776
Maintenance cost per stormwater management facilities (2)	\$994	\$644	\$903 / \$666	\$699	\$734
Maintenance cost per walkways/trails (miles)	\$766	\$657	\$632 / \$448	\$470	\$494
Design cost as a percent of TPE	11%	10%	10% / 10%	10%	10%
Cost per SWM outfall inspected and sampled	\$126	\$170	\$163 / \$160	\$160	\$160
Cost per waiver request and rezoning application processed	\$393	\$411	\$411 / \$240	\$300	\$300
Commuter Rail and Park-and-Ride Average Annual Maintenance Cost Per Facility	NA	NA	NA / \$43,390	\$46,316	\$48,429

# STORMWATER MANAGEMENT

Indicator	Prior Year Actuals			Current Estimate	Future Estimate
	FY 2000 Actual	FY 2001 Actual	FY 2002 Estimate/Actual	FY 2003	FY 2004
<b>Service Quality:</b>					
Storm drainage system, percent inspected (100 miles)	11.5%	25.0%	20.0% / 16.2%	20.0%	20.0%
Stormwater management, percent inspected (100 facilities)	100.0%	100.0%	100.0% / NA	100.0%	100.0%
Walkways/trails, percent inspected (100 miles)	100.0%	40.0%	40.0% / 46.0%	40.0%	40.0%
Percent of improvement designs completed on time and within budget	50%	50%	70% / 50%	60%	65%
Percent of SWM outfalls inspected and sampled requiring correction or resolution	NA	10%	10% / 10%	10%	10%
<b>Outcome:</b>					
Citizen maintenance requests per storm drainage (100 miles)	75	58	75 / 51	70	70
Citizen maintenance requests per stormwater management (100 facilities)	10	11	11 / 8	9	9
Citizen maintenance requests per walkways/trails (100 miles)	10	6	6 / 5	6	6
Percentage point change in improvement designs completed on time and within budget	(8)	15	10 / 0	10	5
Maintain zero DEQ major comments regarding the MS4 Annual Report	Yes	Yes	Yes / Yes	Yes	Yes
Percent of rezoning applications and waiver requests processed within established deadlines	NA	75%	75% / 75%	75%	75%
Annual Citizen Maintenance Requests For All Facilities	NA	NA	NA / NA	36	36

(1) Commuter Rail and Park-and-Ride Performance Measurements are being reported for the first time in FY 2004. Inspection services include preparation of a detailed report of deficiencies of all facilities. The current maintenance contract was executed in March of FY 2001. The fluctuation of inventory between FY 2002 and FY 2003 is the result of the removal of Sully Park-and-Ride from the program. Services were provided for a partial year in FY 2002.

(2) On-going maintenance requirements were redefined in FY 2001, resulting in decreased costs.